UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

TROUT UNLIMITED; AMERICAN RIVERS; PACIFIC RIVERS COUNCIL; WILD STEELHEAD COALITION; NATIVE FISH SOCIETY; SIERRA CLUB; and FEDERATION OF FLY FISHERS,

Plaintiffs,

and

BUILDING INDUSTRY ASSOCIATION OF WASHINGTON; COALITION FOR IDAHO WATER; IDAHO WATER USERS ASSOCIATION; and WASHINGTON STATE FARM BUREAU,

Intervenor-Plaintiffs,

v.

D. ROBERT LOHN, in his official capacity as Regional Administrator of NMFS Northwest Regional Office; and NATIONAL MARINE FISHERIES SERVICE,

Defendants.

CASE NO. CV06-0483-JCC

ORDER

This matter comes before the Court on the Motion of Plaintiffs Trout Unlimited, *et al.* ("TU") for Summary Judgment (Dkt. No. 41), the Motion of Intervenor-Plaintiffs Building Industry Association of Washington, *et al.* ("BIAW") for Summary Judgment (Dkt. No. 39), and the Cross-Motion of Defendants National Marine Fisheries Service, *et al.* ("NMFS") for Summary Judgment (Dkt. No. 56). Also before the Court is TU's Motion to Strike (Dkt. No. 67), and NMFS's Cross Motion to Strike (Dkt. No. 68). Having considered the briefs of the parties and the supporting declarations and exhibits, and having concluded that oral argument is not necessary, the Court hereby finds and rules as follows.

I. Background

TU brings this challenge to NMFS's *Policy on the Consideration of Hatchery-Origin Fish in Endangered Species Act Listing Determinations for Pacific Salmon and Steelhead*, 70 Fed. Reg. 37,204 (June 28, 2005) (referred to as "Hatchery Listing Policy" or "HLP"). The Hatchery Listing Policy provides guidance on how hatchery-raised fish are to be treated when making decisions

about whether salmon and steelhead populations should be listed as endangered or threatened under the Endangered Species Act ("ESA"). The HLP directs that, so long as they are sufficiently genetically similar, hatchery fish and wild, or naturally spawning, fish will be considered the same "species," will both be analyzed in decided whether the species is threatened or endangered, and if so, will both be listed as such. Applying this policy, NMFS changed the listing of a steelhead population that inhabits the Upper Columbia River ("Upper Columbia River Steelhead") from endangered to threatened.

A. Wild Salmon and Steelhead

Salmon and steelhead[1] are species of anadromous fish that are well-adapted for their strange life cycles. Their lives begin when they emerge from eggs deposited in fresh-water rivers and streams: in the Pacific Northwest, those waterways include the Columbia River and its major tributaries, such as the Willamette River, the Snake River, the Okanogan River, and the Yakima River. They live and grow for a year or more in these fresh-water streams before beginning one of at least two migrations that will occur in an average life cycle—down to the ocean. Once in the salt water, they feed and mature for between two and five years, depending on the species. After reaching maturity, adult salmon begin their second migration, which can be thousands of miles, back to their natal stream. There they compete for mates, build nests where they deposit and fertilize their eggs, and die. Adult steelhead complete the same return migration to their freshwater origins, but they are able to survive the spawning; some spawn a second or even a third time. 05-1128, Dkt. No. 84 at 2[2]; AR 353.

[1] Pacific salmon and steelhead belong to the same taxonomic genus, *Oncorhynchus*, in the family *Salmonidae*. There are seven species of anadromous Pacific salmon—pink salmon, coho salmon, chinook salmon, chum salmon, sockeye salmon, steelhead, and cutthroat. Jim Lichatowich, *Salmon Without Rivers* 231 (1999). For simplicity, the Court will refer to all of these species as "salmon."

[2] Because TU asserts an identical challenge to the facial validity of the HLP in a related case also before the Court, *Trout Unlimited v. Lohn*, 05-1128 (W.D. Wash.) ("*Trout I*"), and because the two cases have an

The long evolutionary history of salmon is nothing short of extraordinary. The family *Salmonidae* is thought to have developed 100 million years ago, before the extinction of dinosaurs. The genus *Oncorhyrchus* probably emerged only 10 to 15 million years ago. Lichatowich, *supra*, at 11, 13. During that time, salmon have survived geological disruptions such as the rotation of the Cascade Mountains, which caused coastal rivers to change their patterns; the most recent ice age, which covered the present location of Seattle with a sheet of ice 4,000 feet thick; and the warming and frequent floods attendant on the thawing of that glacier. *Id.* at 13–20.

The ability of salmon to survive such disruptions can be explained by the development of a suite of life histories resulting in genetically and behaviorally diverse populations. In his seminal work, *Salmon Without Rivers*,[3] fisheries biologist Jim Lichatowich explained it this way:

> In undisturbed rivers, each salmon population is composed of a bundle of several life histories, or several alternative survival strategies. . . . As the riverspace changes due to natural disturbances (fires, floods, droughts, and so on), some of the salmon's life histories are in survival peaks, while others drop into troughs. This diverse array of life histories diminishes the risk of catastrophic mortality and the loss of an entire population in a naturally changing environment.

Id. at 79; *see also* AR 51 at 14–15. Accordingly, salmon populations can vary greatly even if geographically close, depending on their adaptations to conditions in the natal stream.

Despite their ability to survive the catastrophic events of millions of years of evolution, salmon populations have experienced substantial declines since the commencement of European settlement of the Pacific Northwest, due to overharvest and severe habitat degradation resulting from logging, mining, irrigation, and construction of dams for hydropower, among other factors. *Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead*, 71 Fed.

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overlapping Administrative Record, the Court will occasionally refer to the pleadings or other documents on the docket in *Trout I*. When citing to such documents, the Court will precede its citation with "05-1128."

[3] The Court references this extra-record text strictly for the limited purpose of providing background information. *Thompson v. United States Dep't of Labor*, 885 F.2d 551, 555 (9th Cir. 1989).

Reg. 834 (Jan. 5, 2006). Accordingly, NMFS began listing populations as threatened or endangered under the ESA in 1989. Twenty-six populations of salmon and steelhead are currently listed under the ESA. 70 Fed. Reg. 37,160 (June 28, 2005); 71 Fed. Reg. 834.

B. Hatcheries and Hatchery Fish

Hatchery-born salmon have a different life history from salmon that are born in the wild; a substantial portion of their lives is spent within the hatchery confines. Hatchery fish are produced by capturing and killing returning adult females, harvesting their eggs, and fertilizing them with the sperm of returning adult males. Young salmon are fed and kept within the hatchery for their freshwater growth period. Hatcheries are geared toward mass-production, and impose conditions on hatchery fish that NMFS scientists describe as unnatural. AR 353-11 at 3. Eventually, hatchery fish are released to complete their migration to the ocean, as wild salmon do. They complete the second migration back to the natal stream and to the hatchery, where adults are killed and the assisted fertilization process is repeated. Because hatchery fish spend a significant portion of their lives in an ocean environment shared by wild fish, and can migrate through some of the same areas, hatchery fish sometimes stray from the hatchery to mate and spawn in the wild.

Hatcheries began to be utilized in the Pacific Northwest in the late 19th century, in an attempt to compensate for the declines in salmon populations and meet the demands of the burgeoning canning industry. Lichatowich, *supra*, at 123. Early hatcheries failed to revitalize salmon populations, and in fact, actually did them a great deal of harm. *Id.* at 141–44. Because it was not understood that salmon are genetically programmed to respond to the environmental cues of their natal streams, hatcheries transferred eggs from river to river, expecting that salmon taken from California or Alaska would be able to survive just as well in Washington or Oregon. Fry transferred away from their natal streams had high mortality rates, and those that survived polluted the specialized gene pool of the fish in the stream to which they were transferred. *Id.* at 125–26.

Moreover, the widespread practice of transferring stock required mining billions of eggs from wild populations, weakening the local stock's ability to replenish itself. *Id.* at 143–44. Today, hatchery practices have improved, due to a significant amount of scientific study.

Scientific consensus is that there remain behavioral, genetic, and phenotypic differences between hatchery and natural fish. AR 353-11 at 3. For instance, while hatchery fish have higher survival rates for the stage from egg to smolt (which takes place within the protected confines of the hatchery), they have lower survival rates for the smolt to adult stage. *Id.* at 3–5. Behaviorally, hatchery fish show less efficient foraging ability, increased aggression, lower territorial fidelity, a preference for surface habitat (making them more vulnerable to predation), and a tendency to approach predators. *Id.* at 3, 5–9. They generally have decreased breeding success, compared to natural salmon. *Id.* at 3, 10. Further, raising fish in a hatchery subjects them to different environmental pressures, leading to artificial selection and domestication.

Moreover, the presence of hatchery salmon in an ecosystem can negatively impact the viability of the wild populations in a variety of ways. AR 353-11 at 1. Hatcheries are capable of releasing far more fish fry than result from natural spawning. These floods of hatchery fish can result in the appearance of a well-stocked fishery, though in actuality it would not be so without human interference. This, in turn, can lead to overfishing and increased pressures on wild stocks. *Id.* Hatchery and wild salmon also have ecological interactions that are detrimental to the wild population—hatchery fish, which tend to be larger than wild fish, compete for habitat and food and prey upon smaller wild fish. *Id.* Interbreeding between hatchery and wild stocks poses genetic risks to wild populations as well, due to the ways in which the environmental pressures of the hatchery differ from those in the wild, thus leading to the selection of different traits. *Id.* at 1–2.

C. Other NMFS Policies Related to the ESA

The ESA provides the Secretary of the Interior and the Secretary of Commerce[4] the authority to decide whether to list species as endangered or threatened, based on criteria that are statutorily set. 16 U.S.C. § 1533(a)(1). "Species" is defined to include "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." *Id.* § 1532(16). The term "distinct population segment" ("DPS") is not further defined in the statute, nor does it have an understood meaning in scientific circles.

1. ESU Policy and Joint DPS Policy

NMFS issued a policy in 1991 that interpreted the statutory term "distinct population segment" as applied to Pacific salmon. *Policy on Applying the Definition of Species Under the Endangered Species Act to Pacific Salmon*, 56 Fed. Reg. 58,612 (Nov. 20, 1991) ("ESU Policy"). In this policy, the agency determined that a salmon stock would be considered a DPS only if it was an evolutionarily significant unit ("ESU") of the biological species.[5] In order to be considered an ESU, the salmon stock must be (1) substantially reproductively isolated from other conspecific population units, and (2) represent an important component in the evolutionary legacy of the species. As to the first criterion of reproductive isolation, the policy stated that the isolation "does not have to be absolute, but it must be strong enough to permit evolutionarily important differences to accrue in different population units." *Id.* As to the second criterion, the policy defined the evolutionary legacy of a species as "the genetic variability that is a product of past evolutionary events and which represents the reservoir upon which future evolutionary potential depends." *Id.*

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[4] The Secretary of the Interior is authorized to make listing determinations as to terrestrial and freshwater species, while the Secretary of Commerce makes listing determinations as to marine and anadromous species. 16 U.S.C. § 1532(15).

[5] The term ESU is essentially a synonym of DPS, as applied to salmon and steelhead populations. Thus, the Court will use the terms interchangeably.

In other words, "if the population became extinct, would this event represent a significant loss to the ecological/genetic diversity of the species?" *Id.* If so, the population represents an important component of the species' evolutionary legacy. The term ESU was given a meaning that focused on genetic factors based on a finding that "a major motivating factor behind the ESA was the desire to preserve a genetic variability, both between and within species." *Id.*

In 1996, NMFS and the United States Fish and Wildlife Service ("FWS") issued a joint policy interpreting the term "distinct population segment" under the ESA. *Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act*, 61 Fed. Reg. 4,722 (Feb. 7, 1996) ("Joint DPS Policy"). The Joint DPS Policy acknowledged that NMFS had already promulgated a policy interpreting the term DPS as applied to Pacific salmonids, and indicated that the ESU Policy is "a detailed extension of" and consistent with the Joint DPS Policy. *Id.* The Joint DPS Policy provided three elements to be considered in demarcating a DPS: (1) the discreteness of the population segment in relation to the remainder of the species to which it belongs, (2) the significance of the population segment to the species to which it belongs, and (3) the population segment's conservation status in relation to the Act's standards for listing. *Id.* at 4723. A population segment is considered discrete if "it is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors" or if it is delimited by international governmental boundaries which are significant with respect to listing determinations. *Id.* The analysis of what constitutes a DPS under the ESA is roughly the same under the Joint DPS Policy as it is under the ESU Policy. The most salient difference is the Joint DPS Policy's decreased focus on genetic differentiation, which results from measuring discreteness using "physical, physiological, ecological, or behavioral factors" instead of simple reproductive isolation.

2. 1993 Interim Hatchery Policy

Two years after issuing the ESU Policy, NMFS issued a policy on the narrower question of how hatchery fish should figure into listing decisions under the ESA. *Interim Policy on Artificial Propagation of Pacific Salmon Under the Endangered Species Act*, 58 Fed. Reg. 17,573 (Apr. 5, 1993). The policy envisioned a limited role for hatchery fish and hatcheries in listing decisions and species recovery efforts. In part, this limited role was found to be appropriate because the ESA "mandates the restoration of threatened and endangered species in their natural habitats to a level at which they can sustain themselves without further legal protection. For Pacific salmon . . . , the ESA's focus is, therefore, on natural populations—the progeny of naturally spawning fish—and the ecosystems upon which they depend." *Id.* However, the policy acknowledged that the ESA's purpose of restoring natural populations in their natural habitats to self-sustaining levels could in some instances be furthered by artificial means, including through the use of hatcheries. Accordingly:

> Artificial propagation may represent a potential method to conserve listed salmon species when the artificially propagated fish are determined similar to the listed natural population in genetic, phenotypic, and life-history traits, and in habitat use characteristics. Regardless of this, however, evaluations of the status of the population under the ESA depend on the viability of the population in the natural habitat and on the status of ongoing conservation measures.

Id. at 17,574. Thus, the policy was clear that artificial propagation was to be used only to the extent that it could further the ESA's central purpose of preserving and promoting self-sustaining natural populations.

Moreover, the policy underscored the substantial scientific uncertainty about the efficacy of artificial propagation as a means to increase natural populations, and advised that "consideration of its use should be based on an objective assessment of the genetic and ecological risks, balancing the potential for deleterious effects against risk to the population of irreversible harm or extinction if

artificial propagation is not implemented." *Id.* The policy described the various genetic and ecological risks artificial propagation poses to wild populations. The genetic risks of artificial propagation include: (1) erosion of genetic variability and reduced fitness in the wild population caused by the reduction in population attendant with the taking of wild broodstock; (2) reduction in the genetic differences between natural populations due to the higher straying rates among hatchery fish, transfers of fish among hatcheries, and transplanting fish outside their natural areas; and (3) adaptation to hatchery conditions and domestication that causes a genetic divide between the hatchery population and the natural population and increases the adverse consequences of interbreeding between the populations. *Id.* The ecological risks include: increased competition and predation, displacement of natural fish, altered migratory and spawning behavior, and disease transfer.

Having considered the substantial risks that hatcheries pose to the preservation of natural salmon populations and their habitats, the policy set out guidelines for (1) considering hatchery fish in making listing determinations, and (2) using hatcheries as a conservation tool in recovery plans. As to the first question, the policy reaffirmed the 1991 ESU Policy's interpretation of the statutory term "distinct population segment" as depending on (1) reproductive isolation, and (2) contribution to the biological species' evolutionary legacy. *Id.* Applying the criteria of reproductive isolation and evolutionary legacy listed in the ESU Policy, the policy provided that hatchery fish would not be considered part of the biological ESU if:

> (1) the hatchery population in question is of a different genetic lineage than the listed natural populations,
>
> (2) artificial propagation has produced appreciable changes in the hatchery population in characteristics that are believed to have a genetic basis, or
>
> (3) there is substantial uncertainty about the relationship between existing hatchery fish and the natural population.

Id. at 17,575.

Even when hatchery fish were included in an ESU found to be at risk of extinction, the policy provided that in general, hatchery fish would not be included as part of the listed species. *Id.* Thus, even if hatchery fish were determined to be sufficiently genetically related to the natural population to be part of the same ESU, they were usually not to be included in the listed population and subject to the protections of the ESA. Only if the hatchery fish were "essential for recovery"—as in cases where the natural population faced a high short-term risk of extinction, or the hatchery population was believed to contain a substantial portion of the genetic diversity remaining in the species—would the hatchery fish be listed as well. The policy did not provide guidance on how assessments of the extinction risk of a given ESU would be made with respect to natural and hatchery fish.

The policy counseled that artificial propagation should have a limited role in recovery efforts. Artificial propagation should only be used when the primary recovery strategy of addressing the factors that led to a species' decline would not produce recovery within an acceptable time, and that it should not be seen as a substitute for addressing those underlying factors. In essence, "artificial propagation should be viewed as a temporary measure, to be held to the minimum necessary for recovery." *Id.*

3. *Alsea Valley Alliance v. Evans*

In 1998, NMFS applied the 1991 ESU Policy and the 1993 Interim Policy in determining that the Oregon coast ESU of coho salmon should be listed as threatened. *Threatened Status for the Oregon Coast Evolutionarily Significant Unit of Coho Salmon*, 63 Fed. Reg. 42,587 (Aug. 10, 1998). This rule determined that nine Oregon hatchery populations were part of the same ESU as

natural populations of the Oregon Coast coho salmon.[6] However, because none of these hatchery stocks were essential for the species' recovery, they were not listed as threatened along with the natural population. *Id.* at 42,589. Accordingly, the species listed as threatened was defined as "Oregon Coast coho salmon . . . [including] all *naturally spawned* populations of coho salmon in streams south of the Columbia River and north of Cape Blanco in Curry County, OR." *Id.* at 42,591 (emphasis added).

NMFS's listing determination was challenged in Oregon's federal district court. *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154 (D. Or. 2001). The plaintiffs alleged that the distinction between naturally spawned and hatchery fish in the Oregon Coast coho listing rule was arbitrary and capricious, arguing that the ESA does not permit NMFS to distinguish between hatchery and wild salmon when making listing decisions, because it cannot make listing distinctions below that of species, subspecies, or distinct population segment. 16 U.S.C. § 1532(16). The Court agreed, holding that the listing determination was indeed arbitrary and capricious. *Alsea*, 161 F. Supp. 2d at 1161.

The Court reasoned that NMFS's adoption of the "evolutionarily significant unit" and its definition in the ESU Policy constituted a "permissible agency construction of the ESA," because it relied on factors of geography and genetics, which Congress had indicated were acceptable considerations. *Id.* However, the Court concluded, based on the ESA's definition of "species," and a single case from the United States District Court for the District of Arizona, *Southwest Center for Biological Diversity v. Babbitt*, 980 F. Supp. 1080 (D. Ariz. 1997),[7] that "distinctions below that of

[6] As to four other hatchery populations, NMFS determined that they were either not part of the ESU, or of uncertain relationship to the ESU. *Id.* at 42,589.

[7] *Southwest Center for Biological Diversity v. Babbitt* does not appear to support the point for which it is cited in the *Alsea* decision. It is cited as support for the Court's conclusion that "[l]isting distinctions below that of a subspecies or a DPS of a species are not allowed under the ESA." *Alsea*, 161 F. Supp. 2d at 1162. *Southwest Center* concerned whether the Joint DPS Policy—which formed the basis for the denial

subspecies or a DPS of a species are not allowed under the ESA." *Alsea*, 161 F. Supp. 2d at 1162. Once NMFS determined that hatchery coho and natural coho were part of the same ESU, the Court held, "the listing decision should have been made without further distinctions between members of the same DPS/ESU." *Id.* Not listing the hatchery fish could have been proper if hatchery and natural coho were in separate ESUs, but the Court expressed doubt that this was possible under the ESU Policy.

> Here, hatchery spawned coho are likely not substantially reproductively isolated from naturally spawned coho because, once released from the hatchery, it is undisputed that hatchery spawned coho and naturally spawned coho within the Oregon Coast ESU share the same rivers, habitat and seasonal runs. It is undisputed that hatchery spawned coho may account for as much as 87% of the naturally spawning coho in the Oregon Coast ESU. In addition, hatchery spawned and natural coho are the same species and interbreed when mature. Finally, the NMFS considers progeny of hatchery fish that are born in the wild as naturally spawned coho that deserve listing protection.

Id. at 1162–63 (internal citations omitted). Having so concluded, the Court found that the listing was arbitrary and capricious and therefore unlawful, and remanded the matter to the agency for further consideration. *Id.* at 1163.

For reasons that strike the Court as rather transparent, NMFS declined to appeal the *Alsea* ruling, and instead elected to amend the 1993 Interim Hatchery Policy. When it became apparent that NMFS would not seek appellate review, a group of fishery and conservation organizations sought, and were granted, permission from the district court to intervene for the purposes of appealing the district court's remand order. *Alsea Valley Alliance v. Dep't of Commerce*, 358 F.3d

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of a petition to list a DPS of multiple subspecies of northern goshawk—violated the ESA. The Joint DPS Policy stated that "the organisms in a population are members of a single species or lesser taxon," which FWS interpreted to require that there be only one subspecies in a single designated DPS application. 61 Fed. Reg. 4722; *Southwest Center*, 980 F. Supp. at 1083. The Court rejected that interpretation, and held that "if Congress had intended that a DPS contain only one subspecies, it would have allowed only the listing of 'DPSs' of subspecies. Instead, the statute reads 'any distinct population segment of any species.'" 980 F. Supp. at 1085. While both cases parse the language of 16 U.S.C. § 1532(16), reading the statute not to preclude multiple subspecies in one DPS is not the same as reading the statute to preclude listing distinctions below that of a subspecies or a DPS of a species.

1181, 1183 (9th Cir. 2004). However, the Ninth Circuit held that it was without jurisdiction to hear the appeal on the merits, however, concluding that the remand order was not "final," under 28 U.S.C. § 1291 or relevant case law. *Id.* at 1184. To the extent that this Court's order can be read to conflict with *Alsea*, perhaps this will have the happy result of instigating needed appellate review.

4. Final Hatchery Listing Policy

NMFS announced its intention to revise, 67 Fed. Reg. 6215 (Feb. 11, 2002), and on June 3, 2004, published a proposed policy for the consideration of hatchery-origin fish in ESA listing determinations. 69 Fed. Reg. 31,354. With the proposed policy, NFMS announced a 90-day public comment period which was extended through November 12, 2004, a total of 162 days. 70 Fed. Reg. at 37,206. It received over 27,000 comments on the policy. *Id.* In addition, NMFS held fourteen public hearings across the Pacific Northwest and California. *Id.* Further, it solicited technical review of the policy from over 50 independent experts from a variety of sectors, and received comments from four. *Id.*

In the Final Hatchery Listing Policy, NMFS reaffirmed the commitment of the 1991 ESU Policy to maintaining genetic diversity, and the basic requirement that an ESU be both substantially reproductively isolated from other conspecific population units and represent an important component of the evolutionary legacy of the species. *Id.* at 37,215. Therefore, the make-up of a salmon ESU is the same under the HLP as it is under the ESU Policy. However, the HLP represented a departure from the Interim Hatchery Policy in that once hatchery fish were determined to be part of the ESU, they were to be considered both in determinations as to whether ESUs should be listed, and in any listing of the ESU of which they are a part.

> In delineating an ESU to be considered for listing, NMFS will identify all components of the ESU, including populations of natural fish (natural populations) and hatchery stocks that are part of the ESU. Hatchery stocks with a level of genetic divergence relative to the local natural population(s) that is no more than what occurs within the ESU: (a) are considered part of the ESU; (b) will be considered in

> determining whether an ESU should be listed under the ESA; and (c) will be included in any listing of the ESU.

Id. at 37,215.

Status determinations were to be based on the entire ESU—both hatchery and naturally spawning fish. The policy was to be applied, however, "in support of the conservation of naturally-spawning salmon and the ecosystems upon which they depend," and "[h]atchery fish will be included in assessing an ESU's status in the context of their contributions to conserving natural self-sustaining populations." *Id.*

In making status determinations, NMFS would consider four indicators of the health of a population: abundance, productivity, genetic diversity, and spatial distribution. *Id.* It was anticipated that hatchery fish could affect these factors, and thus the status of the ESU as a whole, in both positive and negative ways:

> The presence of hatchery fish within the ESU can positively affect the overall status of the ESU, and thereby affect a listing determination, by contributing to increasing abundance and productivity of the natural populations in the ESU, by improving spatial distribution, by serving as a source population for repopulating unoccupied habitat, and by conserving genetic resources of depressed natural populations in the ESU. Conversely, a hatchery program managed without adequate consideration of its conservation effects can affect a listing determination by reducing adaptive genetic diversity of the ESU, and by reducing the reproductive fitness and productivity of the ESU.

Id.

D. Challenged Upper Columbia Steelhead Downlisting

Oncorhynchus mykiss, one of seven species of Pacific salmon, has what NMFS terms "one of the most complex suites of life history traits of any salmonid species." *Listing of Several Evolutionarily Significant Units (ESUs) of West Coast Steelhead*, 62 Fed. Reg. 43,937 (Aug. 18, 1997) (original steelhead listing); *see also Proposed Listing Determinations for 27 ESUs of West Coast Salmonids*, 69 Fed. Reg. 33,102, 33,109 (June 14, 2004). *O. mykiss* is made up of

anadromous members (called "steelhead") as well as members that spend their entire lives in freshwater ("rainbow trout").[8] Steelhead and rainbow trout interbreed, and are capable of having offspring that express the alternative life history form. 62 Fed. Reg. at 43,941. Indeed, where they co-occur, resident and anadromous forms of *O. mykiss* are genetically indistinguishable. 71 Fed. Reg. at 837. The anadromous form spends up to seven years in fresh water prior to smoltification, and then up to three years in salt water before returning to fresh water to spawn. 69 Fed. Reg. at 33,109. *O. mykiss* is iteroparous, meaning that individual fish may spawn more than once. *Id.*

The Upper Columbia River steelhead ESU is an inland steelhead ESU in the Columbia River Basin upstream from the Yakima River, Washington to the United States-Canada border. 62 Fed. Reg. at 43,945–46; 71 Fed. Reg. at 849. The populations in this ESU were impacted by the construction of the Grand Coulee Dam in 1939, which completely blocked thousands of kilometers of river upstream from the dam from inhabitation by salmon. 62 Fed. Reg. at 43,945–46; *see also* AR 520 at 164. From 1939 to 1943, all anadromous fish migrating upstream were trapped at the Rock Island Dam and either released to tributaries between the Rock Island and Grand Coulee Dams or spawned in hatcheries and the offspring released in the same area. 62 Fed. Reg. at 43,946. This was done without regard to the origin of the fish, and the affect this had on stock composition is unknown. *Id.* Stock mixing practices continued between 1960 and 1981, when adults for Upper Columbia steelhead programs were collected at Priest Rapids Dam. AR 520 at 164. Accordingly, local stocks in this ESU have been homogenized over a long period of time. *Id.*

[8] NMFS maintains jurisdiction over steelhead, but FWS maintains jurisdiction over rainbow trout.

This ESU was originally listed as endangered in 1997.[9] 62 Fed. Reg. 43,950. The listing was based on the fact that natural steelhead exhibited low abundance, both in absolute numbers and in relation to the numbers of hatchery fish sharing the habitat. In addition, estimates of natural production indicated that naturally-spawning fish in the ESU were not able to replace themselves. In sum, NMFS concluded that "natural steelhead populations in the Upper Columbia River Basin are not self-sustaining at the present time." *Id.* at 43,949.

In this original listing, NMFS listed the effect of hatchery and harvest management as a factor affecting the endangerment of the ESU under 16 U.S.C. § 1533(a). Specifically, the listing pointed out that "hatchery programs intended to compensate for habitat losses have masked declines in natural stocks and have created unrealistic expectations for fisheries. Collection of natural steelhead for broodstock and transfers of stocks within and between ESUs has detrimentally impacted some populations." 62 Fed. Reg. at 43,944. Moreover, NMFS found that the Wells Hatchery program presented a considerable threat to the steelhead in the ESU due to genetic mixing of populations leading to reduced opportunity to preserve locally adapted genetic lineages. *Id.* at 43,949–50. Nonetheless, because of the precarious state of this population, NMFS found that the Wells hatchery stock was essential to the recovery of ESU, and included it in the listing. *Id.* at 43,946.

In conjunction with its re-examination of the Interim Hatchery Listing Policy, NMFS re-evaluated the listing of the Upper Columbia River Steelhead ESU (along with twenty-six other salmon ESUs). It published proposed listing determinations shortly after it published the proposed HLP. 69 Fed. Reg. 33,102.

[9] Though NMFS believed at this time that resident rainbow trout were properly included in the ESU pursuant to the ESU Policy, they were not listed along the steelhead as endangered. *Id.* at 43,951.

NMFS indicated in the proposed listings that the make-up of an ESU was determined based on the criteria set out in the ESU Policy, *i.e.* reproductive isolation and importance to the evolutionary legacy of the species. *Id.* at 33,111. In determining which hatchery stocks were appropriate for inclusion in the ESU, NMFS relied on a Salmon and Steelhead Hatchery Assessment Group ("SSHAG"), scientists largely from the Northwest Fisheries Service Center who used available information to assess the relatedness of each hatchery stock to the natural population on the basis of stock origin and the degree of genetic divergence between the hatchery stock and the natural population. *Id.*; *see also* AR 520. NMFS then applied those findings to determine the ESU membership of hatchery stocks, reporting its findings in the Salmonid Hatchery Inventory and Effects Evaluation Report ("SHIEER"). 69 Fed. Reg. at 33,111; *see also* AR 1459. Interestingly, NMFS included in an ESU rainbow trout (resident *O. mykiss*) that were not separated from anadromous steelhead by physical barriers to interbreeding. *Id.* at 33,113. The Upper Columbia River steelhead ESU included hatchery stocks from six artificial propagation programs—Wenatchee River, Wells Hatchery (Methow and Okanogan Rivers), Winthrop NFH, Omak Creek, and Ringold steelhead hatcheries—as well as resident rainbow trout populations that co-occur with the anadromous populations. *Id.* at 33,119.

In assessing the viability and extinction risk of an ESU, NMFS relied on the findings of its Pacific Salmonid Biological Review Team ("BRT"), made up of NMFS scientists, which assessed the viability of *naturally spawning populations* in each ESU, without explicitly considering artificial propagation. *Id.* at 33,110; AR 1461. The BRT made its risk assessments on the basis of the four risk assessment criteria ultimately listed in the HLP: abundance, productivity, spatial structure, and diversity. 69 Fed. Reg. at 33,110. Because the HLP provides that status determinations are to be made on the status on an entire ESU, "the BRT's findings

represent a partial assessment of the ESU's extinction risk." *Id.* at 33,112. In order to evaluate the contributions of within-ESU hatchery stocks, NMFS relied on the SHIEER evaluation of the effects of hatchery stocks on the extinction risk of the entire ESU. It also relied on the findings of an Artificial Propagation Evaluation Workshop ("APEW"), which analyzed the BRT and SHIEER findings and assessed the overall extinction risk of ESUs with associated hatchery stocks. *Id.*; AR 1458. Having applied this status assessment framework to the Upper Columbia River steelhead ESU, NMFS concluded that the ESU was likely to become endangered within the foreseeable future, and proposed a downlisting from endangered to threatened. 69 Fed. Reg. at 33,165.

Several things changed between the publication of the proposed listing determinations and the final listing determinations. First, the composition of the ESU changed slightly. 71 Fed. Reg. at 834. Because of their shared jurisdiction over *O. mykiss*,[10] NMFS and FWS determined that instead of determining the composition of an *O. mykiss* ESU using the criteria set out in the ESU Policy, it was appropriate to instead use the criteria developed in the Joint DPS Policy. *Id.* at 834–35. The Joint DPS Policy measures discreteness with respect to physical, physiological, ecological, and behavioral factors, in contrast to the ESU Policy's narrower focus on reproductive isolation. *See supra* Part I.C.1. Accordingly, application of the Joint DPS Policy to *O. mykiss* populations resulted in the exclusion of resident forms of *O. mykiss* from steelhead DPSs. *Id.* at 838. In all other respects, however, the composition of the Upper Columbia River Steelhead DPS remained the same under the final listing determination as was the ESU under the proposed listing determination, including the incorporation of hatchery steelhead stocks as provided for in the HLP. *Id.* at 848.

[10] Recall that while NMFS has jurisdiction over anadromous forms of *O. mykiss*, FWS has jurisdiction has jurisdiction over resident rainbow trout populations.

Second, between the proposed and final listing determinations, NMFS clarified language in the HLP concerning how status assessments were to be made. This change was designed to address criticism from its own experts that the policy was insufficiently focused on the viability of self-sustaining natural populations. 70 Fed. Reg. at 37,214–15; AR 51. Accordingly, the final HLP includes the following line, which was not found in the proposed hatchery listing policy: "Hatchery fish will be included in assessing an ESU's status in the context of their contributions to conserving natural self-sustaining populations." *Id.* at 37,215. Notwithstanding this addition, the final status assessment was performed in the same manner in which it was proposed—by considering the BRT's assessment of the status of naturally-spawning populations, then relying on the SHIEER and APEW Reports to assess the affect of hatchery populations on the total DPS. 71 Fed. Reg. at 851. Unsurprisingly then, NMFS's conclusion that the Upper Columbia River steelhead DPS was threatened, rather than endangered, was also unchanged. *Id.* at 854–55.

II. The Parties and Claims

Plaintiffs are conservation organizations whose members use the watersheds in Washington, Oregon, Idaho, and California that are home to Pacific salmon for recreational, scientific, aesthetic, and commercial purposes. Dkt. No. 1 at 2–4. They allege that the interests of their members in enjoying continued benefits from the existence of Pacific salmon are directly and adversely affected by Defendants' alleged failures to follow the ESA.

Defendants are the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration ("NMFS"), an agency of the United States Department of Commerce that is responsible for administering the ESA as to threatened and endangered marine and

anadromous species,[11] and D. Robert Lohn, in his official capacity as Regional Administrator of the NMFS Northwest Regional Office.

Intervenors are trade associations and advocacy organizations who advance agricultural interests, fight land and water use regulations, and seek to reform environmental laws to make them compatible with land use, water use, and private property rights. They fear that needless listings of salmon and steelhead populations will impede their members' livelihoods. Dkt. No. 12.

TU seeks summary judgment on its claims that NMFS has violated the ESA in three ways. First, TU claims that the HLP violates the ESA by departing from the ESA's central purpose of protecting self-sustaining populations in their natural habitats and failing to utilize "the best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A). Second, TU claims that NMFS violated the ESA in downlisting the Upper Columbia River steelhead ESU from endangered to threatened, a decision it alleges is contrary to the central purpose of the ESA and failed to rely on the best available scientific data. Third, TU claims that NMFS was arbitrary and capricious in denying its petitions to split naturally-spawning and hatchery fish into two separate listing units.

BIAW also seeks summary judgment, arguing that the HLP permits NMFS to draw distinctions between hatchery and wild salmon that are impermissible under the ESA.

NMFS cross-moves for summary judgment, and argues that both the HLP and the downlisting of the Upper Columbia steelhead ESU comport with the ESA. NMFS further argues that its denial of TU's petitions was not arbitrary and capricious.

III. Standard of Review

Rule 56 of the Federal Rules of Civil Procedure governs summary judgment motions, and provides in relevant part, that "[t]he judgment sought shall be rendered forthwith if the pleadings,

[11] NMFS is now known as "NOAA Fisheries." *Nat'l Wildlife Fed. v. Nat'l Marine Fisheries Serv.*, 422 F.3d 782, 791 n.6 (9th Cir. 2005). The Court will refer to the agency as NMFS for convenience.

depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue of material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). In the present case, the underlying facts are contained in the Administrative Record. Therefore, only legal issues remain, and the parties agree that disposition on summary judgment is appropriate.

TU and BIAW seek review of their claims under the ESA's citizen suit provision, 16 U.S.C. § 1540(g). Because the ESA does not specify a standard of review, the Ninth Circuit employs the standard of review provided for in the Administrative Procedures Act, under which an agency action may be set aside only if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); *Pyramid Lake Paiute Tribe of Indians v. Dep't of Navy*, 898 F.2d 1410, 1414 (9th Cir. 1990). This is a deferential standard, designed to ensure that the agency considered all relevant factors, and that its decision contains no clear error of judgment. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971); *Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1034 (9th Cir. 2001). While it is not permissible for the Court to substitute its judgment for that of the agency, a careful, searching review is required to ensure that the agency made a rational analysis and decision based on the record before it. *Nat'l Wildlife Fed. v. Nat'l Marine Fisheries Serv.*, 481 F.3d 1224, 1233 (9th Cir. 2007); *Pac. Coast Fed'n of Fishermen's Ass'ns v. United States Bureau of Reclamation*, 426 F.3d 1082, 1090 (9th Cir. 2005). Agency action can be overturned if the agency "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983).

NMFS agrees that the arbitrary and capricious standard applies to the Court's review of the downlisting determination and the denial of the petition to list hatchery and natural fish in separate ESUs. However, NMFS argues that when determining the facial validity of the HLP, the Court should apply *Chevron* deference. *Chevron U.S.A. Inc. v. Nat'l Res. Def. Council*, 467 U.S. 837 (1984). *Chevron* provides that when a court is reviewing an agency's construction of a statute that it administers, the court must first determine whether Congress has directly spoken on the precise question at issue, and give effect to the unambiguously expressed intent of Congress. *Id.* at 842–43. If Congress has not spoken to the precise question, however, the court does not simply impose its own construction of the statute, but queries whether the agency's construction is a permissible one. *Id.* at 843. NMFS argues that because the statutory term "distinct population segment" is ambiguous, 16 U.S.C. § 1532(16), *Chevron* mandates that the Court defer to the agency's interpretation in the HLP.

The Court disagrees. The HLP does not interpret the concededly ambiguous statutory term "distinct population segment." Instead, it specifically "reaffirm[s] application of the [1991] ESU policy in delineating DPSs eligible for ESA listing," 70 Fed. Reg. at 37,206, and incorporates that policy's interpretation of the term distinct population segment. *Id.* at 37,215. Accordingly, the application of *Chevron* deference is not appropriate in the present case. The Court will review the facial validity of the HLP under the arbitrary and capricious standard.

IV. Analysis

A. Scope of the Record: Request to Strike Paine Declaration and RSRP Reports

In support of its motion for summary judgment, TU submits the declaration of Robert Paine, who served from 2000–04 as Chair of the Recovery Science Review Panel ("RSRP"), a panel of independent scientists and experts who provide assistance to NMFS on scientific issues of importance relating to salmon. In his declaration, Paine describes a meeting of the panel in

July 2003, in which the panel discussed the role of hatchery stock in salmon recovery, the report the panel drafted after their discussion, and the response of Defendant Robert Lohn upon receiving the report. The RSRP ultimately decided to excise two sections from the original report. Attached to Paine's declaration are both versions of the RSRP report. NMFS requests that the Court strike the Paine declaration and attached exhibits, because judicial review of agency actions under the APA is limited to the administrative record. In the alternative, NMFS requests that the Court also review the declaration of Robert Lohn that it submits, with attached exhibits.

NMFS is correct that in a challenge to agency action, judicial review is generally limited to the administrative record before the agency when the decision was made. *Citizens to Preserve Overton Park*, 401 U.S. at 420; *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 560 (9th Cir. 2000). The administrative record consists of "all documents and materials directly or *indirectly* considered by the agency decision-makers." *Thompson v. United States Dep't of Labor*, 885 F.2d 551, 555 (9th Cir. 1989) (citations omitted). NMFS argues strenuously that the agency's determination of what constitutes the "whole record" is entitled to a presumption of regularity, but cites to no Ninth Circuit precedent adopting that presumption. *Bar MK Ranches v. Yuetter*, 994 F.2d 735, 740 (10th Cir. 1993).

A court can review documents outside the record, but should generally consider such evidence only for the limited purpose of background information. *Thompson*, 885 F.2d at 555. The Ninth Circuit also permits courts to look beyond the administrative record when:

> (1) necessary to determine whether the agency has considered all relevant factors and has explained its decision,
> (2) the agency has relied on documents not in the record, or
> (3) supplementing the record is necessary to explain technical terms or complex subject matter.

Sw. Ctr. for Biological Diversity v. United States Forest Serv., 100 F.3d 1443, 1450 (9th Cir. 1996) (internal quotation marks omitted). Extra-record documents are also admissible when the plaintiffs make a showing of bad faith. *Id.*

In the present case, it is not necessary to rely on one of the narrow exceptions in which the Ninth Circuit permits a court to look beyond the administrative record. The email submitted in support of Lohn's declaration demonstrates that the RSRP reports were considered by the agency decision-makers, and therefore constitute part of the "whole administrative record" as defined under *Thompson*. Even if the Court applies a presumption of regularity to the agency's composition of the administrative record—notwithstanding that NMFS fails to cite, and the Court has failed to uncover, any authority showing that such a presumption is applied in the Ninth Circuit—the documents themselves are sufficient to rebut that presumption. TU has no objection to the addition of the Lohn declaration and attached exhibits. Accordingly, the Court will include both sets of declarations and exhibits in its review.

B. The Hatchery Listing Policy

TU challenges essentially two aspects of the HLP. First, it challenges the incorporation of hatchery fish into the same population segment as wild fish, whether pursuant to the ESU Policy or the Joint DPS Policy. In 2002, TU petitioned NMFS to put wild and hatchery stocks of Pacific salmonids in separate population segments when making listing determinations under the ESA. AR 1637, 1638. NMFS declined to do so, publishing its rationale for denying the petitions in the post-*Alsea* proposed listing determinations. 69 Fed. Reg. at 33,112–13. TU argues that this denial was arbitrary and capricious.

Second, TU challenges the way in which the viability of, or risk of extinction faced by, a population is determined under the HLP. Interpreting the HLP to require NMFS to assess the status of an entire DPS or ESU, wild and hatchery stocks together, TU argues that this is contrary

to the central purpose of the ESA—the preservation of natural self-sustaining populations—and that it is contrary to the best available scientific data. Because both these arguments hinge on the purpose of the ESA, it is useful to consider that first.

1. Purpose of the ESA

When it was passed in 1973, the Endangered Species Act represented "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 179 (1978). The Supreme Court's first examination of the legislative history behind the Act led it to conclude "beyond doubt that Congress intended endangered species to be afforded the highest of priorities." *Id.* at 174.

Though it scarcely seems open to debate, the Court concludes that in evaluating any policy or listing determination under the ESA, its polestar must be the viability of naturally self-sustaining populations in their naturally-occurring habitat. That the purpose of the ESA is to promote populations that are self-sustaining without human interference can be deduced from the statute's emphasis on the protection and preservation of the habitats of endangered and threatened species. The protection of the ecosystems upon which endangered and threatened species depend is explicitly recited as the statute's purpose. 16 U.S.C. § 1531(b) ("The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered and threatened species."). Furthermore, concurrent with a listing determination, the Secretary is required to designate any habitat determined to be "critical," 16 U.S.C. § 1533(a)(3)(A)(i), *i.e.* specific areas within or outside the geographical area occupied by the species on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection. *Id.* §

1532(5)(A). If the ESA did not require that species be returned to a state in which they were naturally self-sustaining, preservation of the habitat of the species would be unnecessary.

The legislative history of the ESA reinforces this view that species are to be protected in the context of their habitats, until they are self-sustaining without the interference of man. The House Report from the 1978 amendments emphasized that "[t]he primary purpose of the [ESA] is to prevent animal and plant species endangerment and extinction caused by man's influence on ecosystems, and to return the species to the point where they are viable components of their ecosystems." H.R. Rep. No. 1625, 95th Cong., 2d Sess. 5 (1978). Moreover, the legislative history indicates that a species is valued in part for its interactions with the ecosystem around it, and that the ESA is designed to protect not just a species's genetic material, but its place in the natural world. *See* S. Rep. No. 307, 93d Cong., 1st Sess. 2 (1973) ("[M]any of these [endangered] animals perform vital biological services to maintain a 'balance of nature' within their environments."); H.R. Rep. No. 412, 93d Cong., 1st Sess. 6 (1973) ("The events of the past few years have shown the critical nature of the interrelationships of plants and animals between themselves and with their environment. . . . The hearings proved (if proof is still necessary) that the ecologists' shorthand phrase 'everything is connected to everything else' is nothing more than cold, hard fact.").

If the statute did not aspire to naturally self-sustaining populations of endangered or threatened species, it would be permissible under the ESA to capture and permanently raise such species in zoos or other environments where they are dependent on human interference for survival. However, the statute mentions artificial propagation just once, as a possible method of conservation which can be used "to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary." 16 U.S.C. §

1532(3). By its very definition, then, artificial propagation is a temporary measure designed to bring a species to the point where the species no longer requires the protection of the ESA.

NMFS has interpreted the ESA to focus on the protection and promotion of naturally self-sustaining populations on numerous previous occasions. For instance, in a policy addressing artificial propagation, NMFS and FWS stated, "our first priority is to recover wild populations in their natural habitat wherever possible, without resorting to the use of controlled propagation." *Policy Regarding Controlled Propagation of Species Listed Under the Endangered Species Act*, 65 Fed. Reg. 56,916 (Sept. 20, 2000). Both the Interim Hatchery Policy and the HLP interpreted the ESA to require the same focus on naturally self-sustaining populations. 58 Fed. Reg. at 17,573 ("The ESA, thus, mandates the restoration of threatened and endangered species in their natural habitats to a level at which they can sustain themselves without further legal protection. For Pacific salmon (*Oncorhynchus*), the ESA's focus is, therefore, on natural populations—the progeny of naturally spawning fish—and the ecosystems upon which they depend."); 70 Fed. Reg. at 37,207–08 ("We agree that the intent of the ESA is to conserve natural self-sustaining populations and functioning ecosystems."). Moreover, NMFS does not contest here that the purpose of the Act is to restore endangered and threatened populations to the point at which they are naturally self-sustaining.[12] The Court concludes that the central purpose of the ESA, and the

[12] BIAW argues that the ESA requires NMFS to treat all the salmon in a population—both hatchery and naturally spawned fish—the same at every stage of the ESA listing process. Dkt. No. 39 at 15. This argument is based on an expanded interpretation of the *Alsea* decision, which concluded only that NMFS must list both hatchery and wild fish as endangered or threatened after having determined that an ESU which included both populations was at risk of extinction. 161 F. Supp. 2d at 1162. Having concluded that the central purpose of the ESA is the promotion and preservation of naturally self-sustaining populations, the Court finds that it is not only permissible for NMFS to treat hatchery and naturally-spawning salmon differently in assessing the risk of extinction faced by an ESU, it will sometimes be required in order to adhere to the central purpose of the ESA. Having disposed of BIAW's central argument, it is unnecessary to further engage the arguments of the Intervenors.

organizing principle upon which ESA listing determinations must be made, is the protection and promotion of endangered and threatened species to the point of being naturally self-sustaining.

2. Status Determinations under the HLP

TU argues that the HLP fails to adhere to the guiding principle of the ESA—the promotion of naturally self-sustaining populations of endangered or threatened species. TU specifically questions the HLP's approach to evaluating the risk of extinction faced by a salmon or steelhead ESU—what the HLP calls a "status determination." 70 Fed. Reg. at 37,215. A terse document, the HLP is hardly free from ambiguity, and indeed, contradiction. AR 51 at 6 (criticizing the proposed HLP for "the ambiguity of its commitment to conservation and recovery of populations in the wild"). The HLP is clear that in delineating an ESU, hatchery fish can be included so long as they are no more genetically divergent than the natural populations in the ESU, and the ESU as a whole meets the criteria set out the ESU Policy. *Id.* The HLP is less clear, however, on how hatchery fish are considered in the critical stage of assessing the risk of extinction faced by an ESU. On the one hand, the HLP states, "[s]tatus determinations for Pacific salmon and steelhead ESUs will be based on the status of *the entire ESU*." *Id.* (emphasis added). On the other hand, the HLP states that "NMFS will apply this policy in support of the conservation of *naturally-spawning salmon* and the ecosystems upon which they depend . . . . Hatchery fish will be included in assessing an ESU's status in the context of their contributions to conserving natural self-sustaining populations." *Id.* (emphasis added).

These statements are in tension. This tension is no more apparent than in the following language, in which NMFS describes how hatchery fish can affect a status determination: "The presence of hatchery fish within the ESU can positively affect the *overall status* of the ESU, and thereby affect a listing determination, by contributing to increasing abundance and productivity of the *natural populations* in the ESU, by improving spatial distribution, by serving as a source

population for repopulating unoccupied habitat, and by conserving genetic resourses of depressed *natural populations* in the ESU." *Id.* (emphasis added). This sentence uses both natural populations, and the ESU as a whole, as the benchmark against which risk assessments are made. The policy clearly anticipates that hatchery fish and natural fish will have different rols in a risk assessment, but provides only one set of criteria for measuring that risk and mandates that they be applied to the "entire ESU." The confusion generated by this language is clear from the differing interpretations of TU and BIAW. TU claims that the HLP is flawed because it "bases ESA listing decisions on the viability of hatchery and wild fish together," while BIAW criticizes the policy for "review[ing] the status of only the 'naturally spawned' portion of the population to determine if that portion warrant[s] listing and evaluat[ing] hatchery salmon separately to determine whether hatchery salmon impacted the decision it had made to list the 'naturally spawned' salmon." Dkt. Nos. 41 at 20, 39 at 19. The Court concludes that the HLP is internally contradictory as to whether status determinations are made on the basis of the viability of natural populations or the ESU as a whole. This ambiguity in the policy obscures the question of whether it is in accordance with the central purpose of the ESA: to promote naturally self-sustaining populations of endangered or threatened species.

The proposed HLP did not include the line, "Hatchery fish will be included in assessing an ESU's status in the context of their contributions to conserving natural self-sustaining populations." *Id.* This line was added to the policy in response to criticism that the proposed policy insufficiently highlighted the importance of natural populations. 70 Fed. Reg. at 37,215; AR 51 at 6. It forms the strongest textual evidence for interpreting the policy to require that natural populations be the benchmark against which status determinations are made. However, the notes preceding the policy indicate that the line was added to clarify that "we do not believe

that the purposes of the ESA would be satisfied by having *all* the salmon in an ESU in hatchery." 70 Fed. Reg. at 37,215 (emphasis added). This interpretive gloss makes it difficult to interpret the statement as registering an intent that natural populations be used as the sole benchmark for assessing ESU viability—*of course* an ESU in which all the salmon were in a hatchery would not satisfy the purposes of the ESA. The question that remains open is what the HLP prescribes when a status assessment of the entire ESU indicates that the ESU as a whole is not threatened or endangered, but an independent evaluation of the natural populations reveals that they are threatened or endangered.

The application of the HLP to the Upper Columbia River steelhead ESU resolves the ambiguity left open by the HLP's internally contradictory language. In determining that the status of this ESU merited that it be downlisted from endangered to threatened, NMFS employed a two-step process. First, a panel of experts from federal agencies, the Biological Review Team ("BRT"), assessed "the viability and extinction risk of naturally spawning populations," 71 Fed. Reg. at 851, and wrote a report memorializing their findings. AR 1461. Second, NMFS "assessed effects of hatchery programs on the extinction risk of a DPS in-total," 71 Fed. Reg. at 851, through a workshop of federal scientists with expertise in artificial propagation, which culminated in the drafting of the Artificial Propagation Evaluation Workshop Report ("APEW Report"). AR 1458. The Court concludes that this two-step evaluation resolves the ambiguity in the policy about whether status determinations are to be made with natural populations or the ESU in-total as their benchmark. If status determinations were to be made based on the viability of the naturally-spawning populations, the viability assessment could have ended after the first step.

In the case of the Upper Columbia River steelhead ESU, the BRT recommended by a slight majority that the population be listed as endangered. AR 1461 at 24–33. The BRT's analysis was based on several assumptions. First, due to uncertainty as to whether resident rainbow trout should be included in ESUs , the BRT included resident fish in its analyis of the viability of the ESU if the resident fish were not separated from steelhead by obvious barriers to interbreeding. *Id.* at 12. It found that resident trout potentially existed alongside steelhead in all areas covered by the Upper Columbia River steelhead ESU. *Id.* at 31–32.

Second, the BRT made its assessment based on "the criterion of self-sustainability of natural populations." *Id.* at 17. It is important to realize that the BRT's approach of focusing on the viability of natural populations does not ignore the effects of artificial propagation altogether. The Report points out that any benefits to natural populations resulting from artificial propagation would be reflected in population abundance data analyzed by the BRT. *Id.* However, the Report also indicates that, unlike other risks to salmon populations, the risks of artificial propagation would not necessarily be revealed in data concerning population abundance for the population as a whole. "Hatchery production may mask declines in natural populations that will be missed if only raw population abundance data are considered. Therefore, a true assessment of the viability of natural populations cannot be attained without information about the genetic and demographic contribution of naturally spawning hatchery fish" *Id.* Thus, at least as to the abundance assessment, the BRT considers hatchery fish "in the context of their contributions to conserving natural self-sustaining populations." 70 Fed. Reg. at 37,215.

After applying the HLP's four status determination criteria—abundance, productivity, spatial structure, and diversity—to the Upper Columbia River steelhead ESU, the BRT concluded this ESU was in danger of extinction. The Report indicated the ESU had seen an

encouraging increase in the number of naturally-produced fish over the past two to three years, but that total returns were still dominated by hatchery fish and only a fraction of interim recovery targets. *Id.* at 136. The Report indicated that data on productivity of natural populations was lacking, but that no data suggested that the extremely low replacement rate for naturally spawning fish had improved since the last assessment. *Id.* Importantly, the Report specified that "[f]or many BRT members, the presence of relatively numerous resident fish mitigated the assessment of extinction risk for the ESU." *Id.* Accordingly, the extinction risk for ESU would probably have been assessed as even more serious had the BRT members not included in their assessment the rainbow trout that were ultimately excluded from the ESU.

The Court concludes that the BRT's focus on the self-sustainability of natural populations shows proper adherence to the central purpose of the ESA. The Report was explicit that self-sustaining natural populations were the benchmark for its analysis. This focus did not exclude consideration of the effects of artificial propagation, but the BRT considered "the benefits and risks associated with past artificial propagation efforts, as they are manifested in the present viability of natural populations in an ESU." AR 1458 at 11. Thus, the BRT put artificial propagation in its proper place as a factor that has the potential to either positively or negatively impact natural populations, and analyzed it *for* its effect on natural populations.

However, the status determination did not end with the BRT Report; NFMS then incorporated the input of APEW. APEW acknowledged that "[t]he manner in which the hatchery stocks associated with an ESU are considered in making a determination about whether the ESU should be listed can have a major effect on the outcome of that determination," and that in *past* evaluations, "NMFS determined that the best scientific indicator of an ESU's extinction risk is the viability of the naturally spawning populations in that ESU." *Id.* at 7. However, *Alsea*

called for a new approach, and APEW intepreted the HLP as requiring a change of focus to "the entire ESU":

> The proposed Hatchery Listing Policy provides that status determinations for Pacific salmonid ESUs will be based on the likelihood of extinction of an entire ESU (including both hatchery and natural components). For those ESUs with associated hatchery programs, the BRT's findings represent a *partial assessment* of the ESU's extinction risk. To assess the viability of *an entire* ESU, NMFS also needs to assess the contributions of within-ESU hatchery programs to the viability of an ESU *in-total*.

Id. at 12 (emphasis added).

Thus, APEW applied the HLP's status determination criteria to the entire Upper Columbia River steelhead ESU. Only with respect to abundance was it clear that analysis of the ESU in total would differ from analysis of the naturally-spawning population within the ESU. Specifically, APEW noted that "within-ESU hatchery programs substantially increase total ESU returns, particularly in the Methow basis where hatchery-origin fish comprise on average 92% of all returns," but that "[t]he contribution of hatchery programs to the abundance of naturally spawning fish is uncertain." *Id.* at 58. Assessing the six artificial propagation programs in the ESU to provide benefits to the ESU's abundance and spatial structure, but neutral or uncertain effects to the ESU's productivity and diversity, and noting the BRT's "close call in assessing the ESU's extinction risk," APEW found it reasonable to conclude that "the benefits provided by the artificial propagation programs to the ESU's abundance and spatial structure could mitigate the immediacy of the ESU's extinction risks." *Id.* at 58–59. APEW concluded that "[w]ithin-ESU artificial propagation programs substantially mitigated the immediacy of extinction risk for . . . the Upper Columbia River *Oncorhynchus mykiss* ESU." *Id.* at 1.

Having considered an application of the status determination provision of the HLP to the Upper Columbia River steelhead ESU, the Court concludes that the HLP, while not free from

ambiguity, mandates that status determinations be based on the *entire ESU*, including both natural and hatchery fish. This assessment method departs from the ESA's central purpose, which is to promote and conserve naturally self-sustaining populations. The status determination for the Upper Columbia River steelhead ESU provides a clear example of how an evaluation of the entire ESU distracts from the risks faced by natural populations and departs from the central purpose of the ESA. Considering strictly the status of natural populations of the ESU, the BRT concluded that the endangered listing should be maintained. Then, in a separate evaluation, APEW considered the effects of artificial propagation on the entire ESU, found that hatcheries provided increases in total abundance and spatial structure, and recommended that the ESU be listed as threatened. If the HLP had maintained the focus on naturally self-sustaining populations found in the Interim Hatchery Policy, the BRT's analysis of the status of the natural populations in the ESU would have ended the inquiry. Because of this, both the HLP, and the Upper Columbia River steelhead ESU listing considered here, are unlawful because contrary to the purpose of the ESA, and must be set aside.

3. Best Available Scientific Data

The ESA requires that status determinations be made "solely on the basis of the best scientific and commercial data available." *Id.* § 1533(b)(1)(A). The Court concludes that nothing in the Administrative Record provides a scientific justification for basing status determinations on the entire ESU, and that to do so is, in fact, contrary to the best available scientific evidence. The scientific evidence in the record does not support a conclusion that an assessment of the status of an entire ESU is an appropriate proxy for assessing the status of natural populations.

First, it is worth noting that the application of the risk assessment criteria to populations including both hatchery and natural fish is of uncertain scientific validity. NOAA's Northwest and Southwest Fisheries Science Centers indicated in their feedback on the proposed HLP that the

Viable Salmonid Population criteria were developed with a specific focus on natural populations, and that "evaluation of hatchery populations or integrated hatchery-wild systems under that framework is not straightforward." AR 51 at 1. The conclusion of these scientists was that "direct application of these criteria to hatchery populations would not be scientifically valid." *Id.* at 6. Thus, the Court begins this analysis with some concern about the scientific validity of applying criteria designed to measure the health of natural populations to populations that include both wild and hatchery stocks.

More importantly, however, the record demonstrates that a healthy hatchery population is not necessarily an indication of a healthy natural population, and that in actuality, a healthy hatchery population can negatively affect the viability of a natural population. The scientific consensus is that artificial propagation has the potential to have either beneficial or deleterious effects on natural populations. AR 51 at 4; AR 1458 at 22 (citing "[n]umerous high-profile scientific panels" that have so concluded). Moreover, the possible negative effects of hatchery stocks on wild populations are scientifically well-established. AR 422 ("Hatchery salmonids have adverse impacts on wild stocks through interbreeding, ecological interactions in fresh water and mixed-stock fisheries. This results in losses in the genetic and life-history diversity of naturally-spawning stock."); AR 424 at 2 ("[H]atcheries relax selection on traits that are crucial for survival of wild salmon, and this is a subtle but . . . pernicious process."), 3 (describing overfishing, and ecological interactions and genetic effects that work to the detriment of wild fish). Thus, measuring the health of a salmon population by reference to the combined hatchery and natural populations does not necessarily provide an appropriate assessment of whether the natural population is on its way to becoming self-sustaining without human interference, and indeed, a healthy hatchery population may mask or obscure the decline of a natural population. AR 423 at 2; AR 424 at 3 (hatcheries "mask declines of

wild populations because we see fish in the rivers and falsely assume that they were produced there"). Furthermore, the best available scientific evidence indicates that long-term reliance on hatcheries is at best an unproven strategy for the long-term conservation of a species or population, and may make its prospects for becoming self-sustaining more difficult with the passage of time. AR 51 at 15; AR 422 at 2; AR 506 at vii.

Finally, the record indicates substantial scientific evidence to conclude that "the status and trends of natural populations and their ecosystem are the best indicators of a species' or ESU's long-term viability." AR 51 at 7, 12 ("[N]early all fishery biologists believe that self-sustaining natural populations are essential for a species' long-term persistence."). Accordingly, the Court concludes that a focus on the extinction risks faced by the entire ESU, when that ESU consists of both hatchery and wild salmon, is not supported by the best available scientific data.

C. Denial of TU Petitions

Having concluded that the HLP is fatally deficient because it shifts status determinations away from the benchmark of naturally self-sustaining populations that is required under the ESA, it becomes necessary to consider the logically prior decision to include hatchery and wild fish in the same ESU. As described above, shortly after the *Alsea* decision was published, TU submitted two petitions to NMFS, requesting that the agency separate wild and hatchery stocks into separate ESUs before making status and listing determinations under the ESA. AR 1637–38. The petitions did not recommend reconsideration of the ESU Policy or the Joint DPS Policy; they argued, however, that proper application of these policies would result in wild and hatchery stocks being included in separate population units. NMFS denied these petitions, concluding that the exclusion of hatchery stocks from the petitioned ESUs was not supported by the best scientific and commercial data.

TU alleges that this decision was arbitrary and capricious because it failed to consider three factors. First, NMFS did not address the argument that ESA listings must be based on populations that can sustain themselves in the wild. Second, NMFS ignored scientific evidence that hatchery fish exhibit important differences from wild fish. Third, NMFS refused to consider evidence that hatchery fish threaten the survival of wild salmon. Dkt. No. 41 at 25. The Court is unpersuaded that NMFS's denial of the petitions was arbitrary and capricious.

These arguments present another attempt by TU to ensure that ESA listing determinations are made with reference to the benchmark of naturally self-sustaining populations, in accordance with the ESA's central purpose. The Court has already concluded that the HLP is deficient for requiring that risk assessments, or status determinations, be made on the basis of the entire ESU, as opposed to the risks facing natural populations. To be sure, the inclusion of hatchery fish alongside natural fish in a given ESU, and listing the entire ESU as required by *Alsea*, when status determinations are ultimately to be made with reference to the health of the natural population alone, strikes the Court as odd. This inclusion will result in hatchery fish being accorded the same protections to which natural fish are entitled, when the ESA is concerned first and foremost with the health of the natural populations.[13] Moreover, the record reveals at least two prominent scientific panels that recommended that hatchery and wild fish be placed in separate ESUs. Dkt. No. 41-2 (RSRP Report); AR 353-24 (*Science* article by RSRP panel members); AR 793 (Hey Panel).

The make-up of an ESU is determined by the criteria set out in the ESU Policy—*i.e.* substantial reproductive isolated from other conspecific population units, and representing an

[13] NMFS seeks to circumvent this odd result by exercising, where appropriate, its authority under section 4(d) of the ESA to permit the harvest of listed hatchery fish that are surplus to the conservation and recovery needs of the ESU. 70 Fed. Reg. at 37,215–16. The Court concludes that this appears to be an appropriate way to resolve this inconsistency.

important component in the evolutionary legacy of the species. 56 Fed. Reg. 58,612. The *Alsea* Court concluded that the ESU Policy was "a permissible agency construction of the ESA." 161 F. Supp. 2d 1154. It is clear that hatchery fish have important differences from wild fish. Nonetheless, the record does not show NMFS's denial of TU's petitions to be arbitrary and capricious.[14] TU's arguments, honed as they are to the promotion and preservation of natural salmon populations, are resolved by the Court's conclusion that status determinations must be made with the health and viability of natural populations as the benchmark.

D. Motions to Strike or File Sur-replies

Interpreting NMFS's Reply (Dkt. No. 66) to raise a preclusion argument not previously raised in the briefing, TU filed a Motion to Strike, or In the Alternative for Leave to File a Sur-reply (Dkt. No. 67). NMFS responded with an Opposition and Cross-Motion to Strike (Dkt. No. 68). Finding that these motions present no argument necessary to the resolution of the cross-motions for summary judgment, the Court finds it unnecessary to rule on their merits, and instead orders them STRICKEN.

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[14] The Joint DPS Policy was not being applied to define steelhead populations at the time that TU petitioned NMFS to separate wild and hatchery stocks into separate ESUs. However, NMFS later determined that it was appropriate to apply the Joint DPS Policy, instead of the ESU Policy, to *O. mykiss* populations. 71 Fed. Reg. at 834. The Joint DPS Policy's diminished focus on genetic differentiation in defining a DPS resulted in the exclusion of genetically identical, but behaviorally distinct, resident *O. mykiss* from steelhead ESUs. *Id.* Since NMFS has changed the underlying policy being applied for demarcating steelhead ESUs, it is possible that it would analyze the question of whether to separate wild and hatchery steelhead differently as well. This question, however, is not before the Court. It is clear, moreover, that changing the way that DPSs are defined could alleviate the tension created between the ESA's purpose of promoting naturally self-sustaining populations and *Alsea*'s holding that when an ESU is determined to be endangered or threatened, NMFS must list it in its entirety. Whether to take this path is a decision best committed to the expertise of the agency.

V. Conclusion

(1) TU's Motion for Summary Judgment (Dkt. No. 41) is GRANTED in part as to its claims that the HLP and Upper Columbia River steelhead ESU listing violate the ESA, and DENIED in part as to its claim that the denial of its petitions to list wild and hatchery stocks separately was arbitrary and capricious.

(2) BIAW's Motion for Summary Judgment (Dkt. No. 39) is DENIED in its entirety.

(3) NMFS's Motion for Summary Judgment (Dkt. No. 56) is DENIED in part as to TU's claims that the HLP and Upper Columbia River steelhead ESU listing violate the ESA, and GRANTED in part as to TU's claim that the denial of its petitions to list wild and hatchery stocks separately was arbitrary and capricious.

(4) The HLP is set aside as contrary to the ESA. Until such time as NMFS promulgates another policy on the consideration of hatchery fish in ESA listing determinations, the Interim Hatchery Policy will be in effect.

(5) The downlisting of the Upper Columbia River steelhead ESU from endangered to threatened is set aside as contrary to the ESA. Until such time as NMFS re-examines its initial listing determination, taking into appropriate consideration the ESA's central purpose of promoting self-sustaining natural populations, the initial listing determination of the Upper Columbia River steelhead ESU as endangered will be in effect.

(6) The Motions to Strike or File Sur-Replies (Dkt. Nos. 67 and 68) are STRICKEN.

SO ORDERED this 13th day of June, 2007.

THE HONORABLE JOHN C. COUGHENOUR
UNITED STATES DISTRICT JUDGE